Small Business Innovation Research/Small Business Tech Transfer

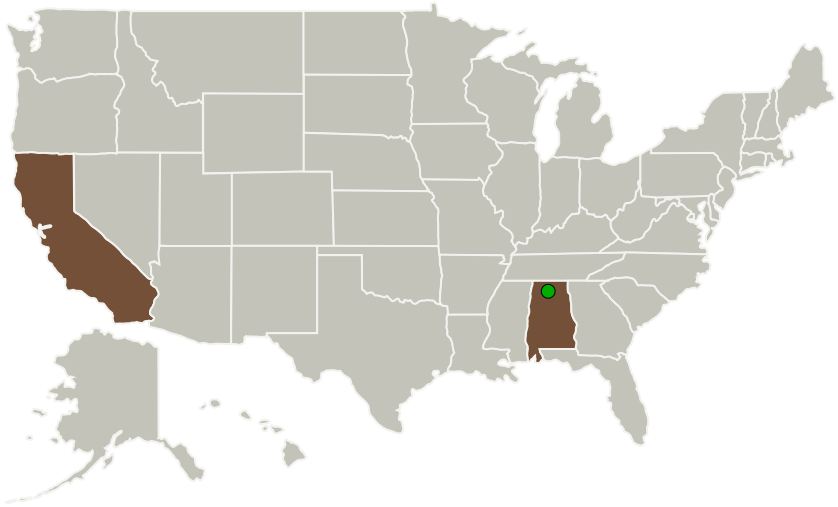
Affordable Small Satellite Launch Vehicle Reaction Control System, Phase I

Completed Technology Project (2017 - 2017)

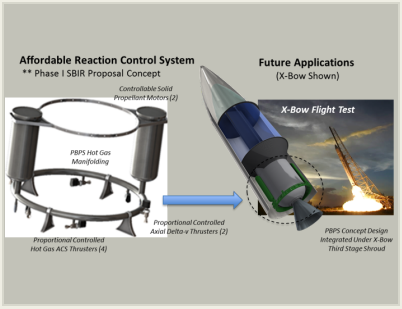
Project Introduction

During this Phase I SBIR program Valley Tech Systems, Inc. (VTS) will develop new long duration solid propellant thrust throttling technology for an affordable launch vehicle Reaction Control System (RCS) for small satellite orbital insertion applications. The new affordable RCS propulsion technology provides NASA with accurate launch vehicle upper stage booster Attitude Control, Post Boost satellite Delta-v and accurate orbital insertion thrust using non-toxic and storable solid propulsion. Additionally, the solid propulsion throttling technology features flexible impulse and accurate thrust throttling in a modular constructed architecture for ease of adapting to numerous future NASA launch vehicle applications. The Phase I program will conduct top level system trades, design concept layouts and critical technology testing to yield a smooth and clear transition from the Phase I to a Phase II prototype demonstration program.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Valley Tech Systems, Inc.	Lead Organization	Industry	Folsom, California
Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama



Affordable Small Satellite Launch Vehicle Reaction Control System, Phase I Briefing Chart Image

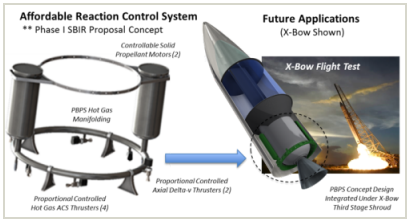
Table of Contents

Affordable Small Satellite Launch Vehicle Reaction Control System, Phase I

Completed Technology Project (2017 - 2017)

Primary U.S. Work Locations	
Alabama	California

Images



Briefing Chart Image
Affordable Small Satellite Launch Vehicle Reaction Control System, Phase I Briefing Chart Image *(https://techport.nasa.gov/image/126071)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Valley Tech Systems, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

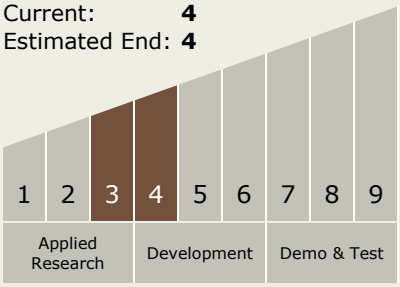
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Russell Carlson

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



Affordable Small Satellite Launch Vehicle Reaction Control System, Phase I

Completed Technology Project (2017 - 2017)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.1 Integrated Systems and Ancillary Technologies